

NASEL AND NORTH RIVERS, WASH.

LETTER

FROM

THE SECRETARY OF WAR.

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORTS ON PRELIMINARY EXAMINATION AND PLAN AND ESTIMATE OF COST OF IMPROVEMENT OF NASEL, NORTH, AND OTHER STREAMS ENTERING WILLAPA HARBOR, WASH., WITH A VIEW TO SNAGGING THE SAME.

APRIL 16, 1914.—Referred to the Committee on Rivers and Harbors and ordered to be printed, with illustrations.

WAR DEPARTMENT,
Washington, April 15, 1914.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit herewith a letter from the Chief of Engineers, United States Army, dated 14th instant, together with copies of reports from Maj. J. B. Cavanaugh, Corps of Engineers, dated November 5, 1913, and February 18, 1914, with maps, on preliminary examination and plan and estimate of cost of improvement, respectively, of Nasel, North, and other streams entering Willapa Harbor, Wash., made by him in compliance with the provisions of the river and harbor act approved July 25, 1912.

Very respectfully,

LINDLEY M. GARRISON,
Secretary of War.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, April 14, 1914.

From: The Chief of Engineers, United States Army.

To: The Secretary of War.

Subject: Preliminary examination and plan and estimate of cost of improvement of Nasel, North, and other streams entering Willapa Harbor, Wash.

1. There are submitted herewith, for transmission to Congress, reports dated November 5, 1913, with maps, and February 18, 1914,

by Maj. J. B. Cavanaugh, Corps of Engineers, on preliminary examination and plan and estimate of cost of improvement, respectively, of Nasel, North, and other streams entering Willapa Harbor, Wash., with a view to snagging the same, authorized by the river and harbor act approved July 25, 1912.

2. The streams entering Willapa Harbor are North River, Cedar River, and Smith Creek on the north; Willapa River, Palix River, North Nemah River, and South Nemah River on the east; Nasel and Bear Rivers on the south. Willapa River, which is the largest stream entering Willapa Bay, is now under improvement as a part of Willapa Harbor and is not considered as included within the scope of the present examination. Of the other streams mentioned only Nasel and North Rivers are of sufficient size and importance to merit improvement. Both of these streams are navigable for light draft vessels for a few miles at all stages, but they are obstructed to some extent by snags. The district officer is of opinion that they are worthy of improvement to the extent of removing these obstructions. As no suitable plant for snagging operations is available in the vicinity he proposes to construct a small nonpropelling derrick barge adapted to the work, which can be used not only on these two streams, but also on other streams tributary to Willapa Harbor and Grays Harbor. The estimated cost of the barge, including operation for two months on the work herein proposed, is \$7,500. The division engineer concurs in the views expressed by the district officer.

3. These reports have been referred as required by law to the Board of Engineers for Rivers and Harbors, and attention is invited to its report herewith, dated March 24, 1914, concurring with the views of the district officer and division engineer.

4. After due consideration of the above-mentioned reports I concur with the views of the district officer, the division engineer, and the Board of Engineers for Rivers and Harbors, and therefore report that the improvement of Nasel and North Rivers, Wash., is deemed advisable to the extent of removing snags and similar obstructions as part of the project for improvement of Willapa River and Harbor by the construction of a derrick barge and its operation for two months, at an estimated cost of \$7,500, and it is recommended that the expenditure of this amount from funds on hand for the improvement of Willapa River and Harbor be authorized.

DAN C. KINGMAN,
Chief of Engineers, United States Army.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS
ON PLAN AND ESTIMATE OF COST OF IMPROVEMENT.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
March 24, 1914.

The CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. This report covers preliminary examination and estimate of Nasel, North, and other streams entering Willapa Harbor, Wash., with a view to snagging the same. The principal tributary of Willapa Harbor is the Willapa River, which is now under improvement and

therefore is not considered as coming under the order calling for this investigation. Of the other streams entering the harbor only the Nasel and the North Rivers are of sufficient size and commercial importance to require consideration at this time.

2. Both these streams are navigable for light-draft vessels for a few miles at all stages, but they are obstructed to some extent by snags, and the improvement contemplated is the removal of such obstructions. There is little general commerce to be affected, but large quantities of logs are rafted or towed in these streams, and this is the business principally concerned.

3. There is no suitable plant available for the work required, and it is proposed to construct a barge and equip it with machinery now on hand and use it for general snagging operations on the streams tributary to Willapa and Grays Harbors, as well as on the Nasel and North Rivers. The estimated cost of the plant and its operation for two months is \$7,500. The district officer and the division engineer recommend the improvement to this extent.

4. It appears that the plant proposed would be useful for general work in the district as well as on the streams now under consideration. The cost involved is not large, and it is believed that resulting benefits would justify the improvement as proposed. It is therefore recommended, in concurrence with the views of the district officer and division engineer, that the United States undertake the work at an estimated cost of \$7,500, and that the improvement be incorporated with and become a part of the general project for Willapa River and Harbor. If this plan is adopted no special appropriation for the work will be required, as there are now sufficient funds on hand that may be used for this purpose.

5. In compliance with law, the board reports that there are no questions of terminal facilities, waterpower, or other subjects so related to the project proposed that they may be coordinated therewith to lessen the cost and compensate the Government for expenditures made in the interests of navigation.

For the board:

W. M. BLACK,
*Colonel, Corps of Engineers,
Senior Member of the Board.*

PRELIMINARY EXAMINATION OF NASEL, NORTH, AND OTHER STREAMS ENTERING WILLAPA HARBOR, WASH.

UNITED STATES ENGINEER OFFICE,
Seattle, Wash., November 5, 1913.

From: The District Engineer Officer.

To: The Chief of Engineers, United States Army
(Through the Division Engineer).

Subject: Preliminary examination of Nasel, North, and other streams entering Willapa Harbor, Wash., with a view to snagging the same.

In compliance with section 2, river and harbor act of July 25, 1912, and instructions contained in your letters dated August 3, 1912, and September 24, 1912, respectively, I have the honor to submit the following report of a preliminary examination of Nasel, North, and other streams entering Willapa Harbor, Wash., with a view to snagging the same, with maps as required.

2. The preliminary examination was made under direction of this office in September, 1912, by Mr. W. T. Preston, assistant engineer, who visited Willapa Harbor and inspected conditions on the Nasel, North, and other streams entering Willapa Bay and Harbor by navigating such streams in a launch of from $3\frac{1}{2}$ feet to 4 feet draft.

3. The streams entering Willapa Harbor are North River, Cedar River, and Smith Creek on the north; Willapa River, Palix River, North Nemah River, and South Nemah River on the east; Nasel River and Bear River on the south.

4. Willapa River, which is the largest stream entering Willapa Bay, is now under improvement as a part of Willapa Harbor and is not considered as included within the scope of the present examination.

5. Other streams entering Willapa Harbor, excepting North and Nasel Rivers, are short, very small, carry little water, and are not at present used for navigation. Slough channels lead from deep water to the mouths of these streams and these are at present of sufficient depth to accommodate any probable traffic and are free from snags. Of the tributaries considered only the Nasel and North Rivers require snagging.

6. Preliminary examination and survey of Nasel River, Wash., was made in 1890 and 1891, and report of this examination and survey may be found in Annual Report Chief of Engineers for 1891, pages 3294 et seq. A complete description of the Nasel River and its characteristics is given in Annual Report of the Chief of Engineers for 1893, pages 3399 et seq. Preliminary examination of North River from its mouth in Willapa Bay upward 25 miles, with complete description of the river, is found in Annual Report of the Chief of Engineers for 1895, pages 3485 et seq.

7. Under acts of August 18, 1894, and March 3, 1899, removal of log jam in North River was authorized. A description of this jam is found in Annual Report of the Chief of Engineers for 1896. The act of Congress of July 13, 1892, appropriated \$1,500 to be used in the snagging of Nasel River. This amount was expended on the work during the fiscal year 1893.

8. Under authority of river and harbor act of June 13, 1902, and project approved November 19, 1902, Nasel River was again snagged and cleared from its mouth to Nasel Landing (12 miles), at a cost of \$1,500. An examination of North River was also made.

9. The Nasel River is navigable at all stages of the tide for small boats of light draft to Nasel Landing, 12 miles above its mouth. Navigation in the North River is dependent on the stages of the tide which are extremely variable. There is a depth varying from 4 to 12 feet at low stage of North River as far up as Cleeb's Boom—12 miles; thence varying from 2 to 3 feet to the head of navigation, 12 miles above the mouth.

10. The maximum tidal variation is 14 feet, and the mean variation is 9 feet. At present the North River is obstructed by about 10 snags, 5 dolphins, and 10 single piles, and the Nasel River by approximately 75 snags, all of which could be removed at nominal expense. Other than a small daily mail boat running from Nahcotta on the western shore of Willapa Bay to Nasel Landing, and occasional small launches bringing supplies to the sawmills on the Nasel River, no boats ply this stream except small logging tugs—usually gasoline boats of about 3 to 4 feet draft. Occasional small boats also travers

the North River. In addition to logs, the total local merchandise traffic on Willapa Harbor, outside of Willapa River, probably does not exceed 1,000 tons annually.

The principal commerce on these streams is the rafting and floating of logs, forming a part of the large and important logging and lumber business of Willapa Harbor.

The only information available regarding commerce on Willapa Harbor and tributaries (not counting Willapa River) is for the North and Nasel Rivers.

NASEL RIVER.

Logs.....	feet b. m..	20, 833, 000
General merchandise.....	tons..	882

NORTH RIVER.

Logs (from above Smith Creek).....	feet b. m..	19, 000, 000
Logs (from below Smith Creek).....	do.....	18, 000, 000
Total.....	do.....	37, 000, 000

11. In view of the important logging interests on the North and Nasel Rivers and the small expenditure required, I am of opinion that the removal of snags and similar obstructions from these streams is an improvement worthy of being undertaken by the United States, and it is recommended that I be authorized to submit an estimate of the cost of this work. As similar obstructions will occur again each year the most logical and economical method of providing for clearing these streams and maintaining them free of obstructions in future is to authorize the application of the necessary funds from the appropriation for Willapa Harbor to this work.

12. There are no questions of terminal facilities, water power, flood prevention, or related subjects to be considered in connection with this examination.

J. B. CAVANAUGH,
Major, Corps of Engineers.

[First indorsement.]

UNITED STATES ENGINEER OFFICE,
NORTHERN PACIFIC DIVISION,
San Francisco, Cal., November 18, 1913.

The CHIEF OF ENGINEERS, UNITED STATES ARMY:

Concurring in the views expressed by the district officer.

THOS. H. REES,
Lieut. Col., Corps of Engineers, Division Engineer.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
December 3, 1913.

The CHIEF OF ENGINEERS, UNITED STATES ARMY:

For reasons stated herein, the board concurs with the district officer and the division engineer in recommending an estimate of cost in order to determine the extent and advisability of the improvement.

For the board.

LANSING H. BEACH,
Colonel, Corps of Engineers,
Senior Member Present.

PLAN AND ESTIMATE OF COST OF IMPROVEMENT OF NASEL, NORTH,
AND OTHER STREAMS ENTERING WILLAPA HARBOR, WASH.

UNITED STATES ENGINEER OFFICE,
Seattle, Wash., February 18, 1914.

From: The District Engineer Officer.

To: The Chief of Engineers, United States Army
(Through the Division Engineer).

Subject: Plan and estimate of cost of improvement of Nasel and North Rivers.

1. In compliance with letter of December 5, 1913, the following plan and estimate of cost of improvement of the Nasel and North Rivers are submitted.

2. As indicated in the report on preliminary examination, the only character of improvement required is the removal of snags and similar obstructions, so as to make fully available the natural depths in these streams. As no suitable plant for snagging operations is available in this vicinity, it is proposed to construct a small nonpropelling derrick barge, adapted to the work, utilizing machinery available in the district, and to operate the same for the short time necessary to thoroughly clear the streams of all obstructions.

3. An important advantage of this plan will be the provision of suitable plant for similar work in future, not only on these two streams, but also on all other streams tributary to Willapa Harbor and Grays Harbor. With this plant available, all snagging required in future on all these tributary streams can be executed at minimum cost and can doubtless be provided for by small allotments from the appropriations for Willapa and Grays Harbors, as contemplated by existing law.

4. The estimated cost in accordance with this plan is as follows:

Construction and equipment of one derrick barge.....	\$5, 000
Operating derrick barge, two months at \$900 per month, including labor, supplies, and tug hire.....	1, 800
Supervision and contingencies.....	700
Total.....	7, 500

5. In my opinion, the improvement of Nasel and North Rivers in the manner and to the extent herein proposed is worthy of being undertaken by the United States.

6. As the Nasel and North Rivers are properly tributary to Willapa Harbor, it is suggested that the project for the improvement of Willapa River and Harbor be enlarged to include the improvement of these rivers, in lieu of making them a separate project of improvement. Sufficient funds appropriated for the improvement of Willapa River and Harbor, and not required in the immediate future for maintenance, are available to cover the cost of the work herein recommended.

J. B. CAVANAUGH,
Major, Corps of Engineers.

[First indorsement.]

UNITED STATES ENGINEER OFFICE,
NORTHERN PACIFIC DIVISION,
San Francisco, Cal., February 23, 1914.

The CHIEF OF ENGINEERS, UNITED STATES ARMY:

Concurring in the views expressed by the district officer.

THOS. H. REES,
Lieut. Col., Corps of Engineers,
Division Engineer.

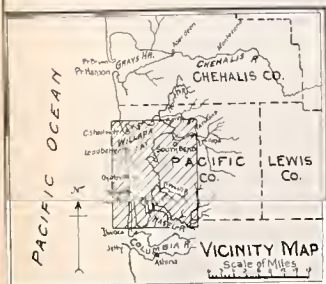
[For report of the Board of Engineers for Rivers and Harbors on
plan and estimate of cost of improvement, see page 2.]



PACIFIC OCEAN



Note: 28 ft over bar
January 1911. Sub-
ject to constant change



LEGEND

18 ft curve shown thus
0 " (approx. M.L.W. thus location
Channel of Willapa where dredged
Soundings are in feet below M.L.W.



EXAMINATION OF NASEL RIVER, WASH.

Prepared under direction of Major J. B. Cavanaugh,
Corps of Engineers, U.S. Army.

W. T. Preston, Assistant Engineer
Scale 1 inch = 2 miles

There is from 3 to 4 ft of water at mean low stage
of the river as far up as Naset Landing, the head of
navigation

U.S. Engineer Office, Seattle, Wash.
With report of Nov. 5, 1913, to the Chief of Engineers

J. B. Cavanaugh
Major, Corps of Engineers, U.S. Army



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LEGEND

18ft curve shown thus, ————

12 " " " " " " ————

6 " " " " " " ————

0 (approx M LLW) thus ————

Dredged portions of Willapa Pt. ————

Soundings are in feet below M LLW

U. S. Engineer Office, Seattle, Wash.,
With report of Nov 5, 1913, to the Chief of Engineers.

J. B. Clavanaugh
Major, Corps of Engineers, U.S. Army.

EXAMINATION OF NORTH RIVER, WASH.

Prepared under direction of Major J B CAVANAUGH,
Corps of Engineers, U.S Army.

W T Preston, Assistant Engineer,
Scale 1 inch = 2 miles

There is a depth varying from 4 to 12 feet at mean low stage of North River as far up as Kleeb's Boom, thence varying from 2 to 3 feet to the head of navigation.

